SECTION 4

IDENTIFICATION OF VARIABLES

A = Total surface area to be protected.

A_R = Radius of anode circle (rod system).

A_S = Area protected by a single anode.

A_{SB} = Area protected by stub anodes.

C_C = Center-to-center spacing of anodes.

C_E = Coating efficiency in decimal form (0 to 0.99)

d = Anode backfill diameter.

D = Tank diameter.

D_A = Diameter of anode wire or rod.

D_E = Equivalent diameter factor for anodes in a circle (for submerged applications).

D_R = Diameter of anode ring (wire anode system).

E = Rectifier efficiency expressed in decimal form.

F = Fringe factor (for submerged rod anodes).

F_{ADJ} = Adjusting factor for parallel anodes.

H = Anode depth below water surface.

I = Total current requirement based on field test or assumed current density per square foot of bare steel.

I' = Required current density.

I_A = Maximum current per anode for the anode's desired life.

K = Shape function.

L = Effective anode length.

L_{AVG} = Average lead wire length of anodes with individual lead wires run in parallel.

L_B = Bare anode length (used in submerged applications).

L_F = Expected anode life.

ln = Natural or Napierian logarithm.

L_W = Header cable/wire length.

M = Anode depth below water surface in centimeters.

N = Number of anodes required to meet the desired life of a cathodic protection system.

N_S = Number of stub anodes required.

B = Greek letter pi, or 3.14159.

P_F = Paralleling factor.

p = Greek letter rho, or Electrolyte resistivity in ohm-centimeters.

R = Average coating resistance in ohm-square feet.

R_A = Single anode-to-electrolyte resistance.

R_{ADJ} = Adjusted resistance.

R_C = Structure-to-electrolyte resistance.

R_H = Single horizontal anode-to-electrolyte resistance.

R_L = Single anode wire hoop-to-electrolyte resistance.

R_{MFT} = Resistance per 1000 linear feet of cable/wire.

R_N = Multiple anodes to electrolyte resistance.

R_{NEG} = Resistance of the rectifier-to-structure negative (ground) cable.

R_S = Effective coating resistance.

R_T = Total circuit resistance.

RN = Header cable/wire resistance.

V_{REC} = Rectifier voltage.